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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,159	04/09/2001	Toshiya Uemura	P 280087 T36-133137M/KOH	7726

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MCGINN & GIBB, PLLC  
8321 OLD COURTHOUSE ROAD  
SUITE 200  
VIENNA, VA 22182-3817

EXAMINER

LEE, EUGENE

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 12/19/2002

16

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/828,159

Applicant(s)

UEMURA, TOSHIYA

Examiner

Eugene Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/365,832.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/23/02 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 21, 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The disclosure does not describe a surface of said light emitting layer on which the sapphire substrate is not formed. The disclosure shows the opposite (see, for example, FIG. 6 wherein the light emitting layer is formed on the sapphire substrate 21).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 21, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "on which the sapphire substrate is not formed" is unclear. It is not clear whether the applicant is referring to the positive electrode and a negative electrode not being formed on the sapphire substrate or whether the sapphire substrate is not formed on the surface of the light emitting layer.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14 thru 16, 19 and 21 thru 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemoto et al. '213 in view of Tsutsui '536. Nemoto discloses (see, for example, FIG. 15E) a semiconductor light-emitting device package comprising a transparent package window portion (transparent base) 32, electrode pads 42, lead frame 58, and light coupled device 51. Nemoto does not disclose the light coupled device having a positive electrode that covers substantially an entire surface of a light-emitting layer of the light-emitting element, and the positive electrode reflecting light emitted from the light-emitting layer toward the light-emitting layer. However, it was well known in the art that GaN based light emitting diodes (devices that have a positive electrode that cover substantially an entire surface of a light-

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emitting layer of the light-emitting element, and the positive electrode reflecting light emitted from the light-emitting layer toward the light-emitting layer) were chips commonly used in light emitting devices. In column 1, lines 7-31, Tsutsui describes light-emitting chips formed on gallium nitride that are capable of emitting portions of light. In FIG. 7(b), Tsutsui shows a light emitting chip 29 with electrodes 30, 31. Light produced from the light emitting chip will reflect off the metallic electrodes 30, 31. In FIG. 7(a), Tsutsui shows electrodes 22, 23 connected to leads 26, 25 by way of wires 27, 28. It would have been obvious to one of ordinary skill in the art at the time of invention to use a light-emitting chip (such as the one used by Tsutsui) in Nemoto's invention since GaN based light emitting diodes are a common light emitting element and are easily substitutable into Nemoto's invention so that a light emitting device of excellent light properties may be obtained.

Also, in column 1, lines 24-43, Tsutsui discloses that light emitting chips comprise a sapphire wafer (substrate). Also, sapphire is a transparent material and light will pass through it when the GaN semiconductor emits light.

8. Claims 17, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemoto et al. '213 in view of Tsutsui '536 as applied to claims 14 thru 16, 19 and 21 thru 24, and further in view of Shimizu '614. Nemoto in view of Tsutsui does not disclose the light coupled device as containing a fluorescent layer. However, Shimizu discloses a fluorescent layer attached to an LED device. It would have been obvious to one of ordinary skill in the art at the time of invention to include this fluorescent layer in the light coupled device of Nemoto in view of Tsutsui so that the light emitted from the fluorescent layer provides complementary additive colors so that white light is emitted (see bottom of first page of Shimizu).

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9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nemoto et al. '213 in view of Tsutsui '536 as applied to claims 14 thru 16, 19 and 21 thru 24 and further in view of Vriens et al. '753. Nemoto in view of Tsutsui does not disclose the lead frame assembly as having projections to reflect light toward the dominant light-emitting direction. However, it is well known in the art that larger lead frames centralize light emitted from the edges of an LED device (see, for example, Vriens et al. '753, column 1, line 41). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include lead frames with large projections (see, for example, FIG. 1a of Vriens et al.) in Nemoto in view of Tsutsui so that the light from the LED device is centralized in one dominant direction (see, for example, column 1, line 38).

***Response to Arguments***

10. Applicant's arguments with respect to claims 14-25 have been considered but are moot in view of the new ground(s) of rejection.

Regarding argument in the middle paragraph of page 5, Tsutsui states that there is a disadvantage of having light radiate through the sapphire substrate in the backside of the chip but it does happen. This also happens in applicant's invention and therefore does not deviate from applicant's invention.

Regarding argument on page 6, Tsutsui clearly states (see column 1, lines 15-43) that the GaN semiconductor may be formed on a sapphire substrate. Clearly the sapphire substrate serves as base and would not form on the surface of the said light emitting layer.

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### INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee  
December 14, 2002



EDDIE C. LEE  
SUPERVISOR  
TECHNICAL STAFF